**Description and Features**

The Alpha series family of sensors features SMA connectors versus the Microdot connectors found on PAC’s RXX series of passive sensors. The Alpha series includes R3α, R6α, R15α, R30α, R50α, R80α and WSα sensors. The major improvements in Alpha series over the RXX series include:

- Use of the more popular SMA type of connector.
- Cavity is machined from a solid stainless steel rod making for a simpler and more robust design.
- Dramatically increased thickness of the ceramic shoe for better mechanical stability.
- Distance from the bottom of the ceramic shoe to the bottom edge of sensor cavity increased for better insulation resistance and ground avoidance.
- Introduced a 30-degree angle at the bottom edge of the sensor cavity.

All these improvements make the Alpha series sensors more robust, reliable and greatly reduce the possible grounding of the cavity to the structure caused by wet environment.

**Application**

This sensor is useful in very noisy plant and process monitoring applications and is particularly suited to such applications as welding monitoring and control.

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**Operating Specifications**

**Dynamic**

- Peak Sensitivity V/(m/s); [V/µbar] ..... 62 [-62] dB
- Operating Frequency Range .......... 100 - 700 kHz
- Resonant Freq. V/(m/s); [V/µbar] ... 100 [500] kHz
- Directionality ................................ ±1.5 dB

**Environmental**

- Temperature Range ...................... -65 to 175°C
- Shock Limit .................................. 500 g
- Completely enclosed crystal for RFI/EMI immunity

**Physical**

- Dimensions .... 0.75" dia. x 0.88" h (19 x 22.4 mm)
- Weight ..................................... 32 grams
- Case Material ............................. Stainless Steel
- Face Material ............................... Ceramic
- Connector .................................. SMA
- Connector Locations ........................ Side
- Seal .......................................... Epoxy
- Sensor to Preamp Cable (1 or 2 meters) ..... 1232-X-SMA

**Ordering Information and Accessories**

- R50α ........................................ R50α or R50a
- Magnetic Hold-Down ...................... MHR15A
- Preamplifier ..................................0/2/4, 2/4/6
- Preamp to System Cable (specify length in meters) ..... 1234 - X

Sensors include

- NIST Calibration Certificate & Warranty

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Frequency response of the R50α. Calibration based on ASTM E1106; Calibration based on ASTM E976.